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QUANTUM MARXISM/NON-LARUELLE

PHILOFICTION CLASS STRUGGLE, MARXISM, NON-LARUELLE, QUANTUM MARXISM, SUPERPOSITION

Laruelle calls for a Marxist gnosis in his essay *Marx with Planck* and consequently calls himself not a Marxist, but a future-oriented Marxist in search of an aleatoric teleology that has no connection with what Marxist philosophy has hitherto set as the measure and method for Marxism. Laruelle thus in no way takes away the distinction between Marxism as a sedimented tradition with a multitude of authors to which he himself belongs and a Marxist philosophy with which one believes to this day that one can return to an authentic Marxism, i.e. to its philosophical origins (which are always attached to Hegel). The removal of Marxism from Hegelianism, as intended by Althusser and Henry, was not entirely successful for Laruelle, who remained trapped by Althusser in a positivist structuralism and by Henry in a transcendental and egological immanence. While Althusserianism ended in the well-known playground and battlefield for Marxist intellectuals, Henry gave the groundbreaking signs of Marxism for Christians. For Laruelle, however, Marxism is neither a purely structural science nor a transcendental philosophy, but a gnosis.

Why does Laruelle use quantum theory for this in the fifth stage of non-philosophy? He first mentions two reasons for the general use of quantum theory: 1) its hard, technical modelling and expansion into other areas of physics, and 2) its use as a new model for rationality related to the human sciences, i.e. its conjugation (complex mapping) with a theoretical-experimental field (aesthetics, ecology, Marxism, etc.).

The second modelling involves a certain theoretical and especially a mathematical simplification of quantum theory beyond its non-negotiable core, which is the mathematical minimum of any science. And this modelling is also the basic condition for a futuristic philosophical practice, namely as a thought experiment under minimal algebraic conditions with and within the philosophical material; Laruelle wants to conceive a complex conjugation (figure compatible with addition and multiplication) of quantum theory and Marxism, a connection that is completely different from all the historical connections of a Marxist philosopher's ideas with Marx's ideas. The new theoretical construction of Marxism aimed at by Laruelle affirms, on the one hand, the fundamental principles of quantum theory and, on the other, lets them act as a Marxist material within a philosophical horizon that is not thought of in its Hegelian form. The construction of an inseparably Marxist and quantum theoretical problem arises on the basis of two intricate theoretical impulses that change the formalism of philosophy without changing its materiality. This in turn requires the liberation of certain quantum theoretical components from their mathematical apparatus, whereby they are reduced to a vectorial apparatus, while at the same time their sufficiency is withdrawn from the philosophical components.

Laruelle is thus concerned with a non-structural quantum modelling of the elementary foundations of Marxism and its philosophical contexts. Thus the history of Marxism should no longer continue as the object of an endless hermeneutics, a hermeneutics that hopes at some point to be able to return to a true understanding of Marx, but a radical transformation of the theoretical foundations of Marxism as well as a new balance between science and philosophy is striven for. How can Marxism be liberated from the dialectics, its appropriation by humanism, and its dramatization by philosophy that have determined all its philosophical approaches so far? For Laruelle, in addition to Hegelianism, his macroscopic rationality and Marx's references to Newton should be deleted. Only then can the aspired superposition of Marx and Planck and a unified theory (no synthesis) emerge, liberated from philosophical choices and unnecessary accessories, to eventually lead to a renewed non-Marxism or non-standard Marxism. The unexpected encounter of Marxism with quantum theory also enables the renewal of its Gnostic aspect. Marxism today must take up the most innovative variables of philosophy and science, the first element of which is quantum theory.

Laruelle first devotes himself to the famous relationship of productive forces and production relations, which in traditional Marxism is understood as contradictory, i.e. as unity and struggle of opposites. In Marxism, both components (productive forces/production relations) are not simple variables, but these are always relations in themselves, although the former seem to be an entity, so that one is dealing with a techno-scientific body in relation to the production relations, which are understood as the relation par excellence. To subsequently think the relation between productive forces and production relations in such a way that it leads to a fusion or synthesis (mode of production) is far too simple a concept; rather, the relation between two variables should generally be constructed first as two inverse becoming (coherence/incoherence) rather than as a relation between two types of isolated bodies. These two processes are equivalent to the variables, since the Becomes are those of the relations of the variables.

Laruelle now introduces the concept of superposition into this problem. It means that a third wave is added to two waves so that all waves remain of the same nature. The thinking here is not based on the object, but on the amplitude of the waves. The superposition is irreducible to a philosophical synthesis and as a materialized thought it does not consist simply in the superposition of mere variables, but in the superposition of coherent / incoherent becoming, i.e. the becoming of relations between simple variables.

The old Marxist concept of fusion or synthesis is still far too philosophical a concept that results on the one hand in empiricism and on the other in a transcendental type of synthesis, a concept that should definitely be replaced by that of superposition, i.e. the vectorial and complex addition of two variables. The law of quantum fusion is not that of the connection between the macroscopic and the microscopic under the condition of a uniform measure, for this would be nothing more than a transcendental synthesis. The "fusion" of the productive forces with the relations of production should be thought from the beginning as superposition or addition of vectors, with which we find ourselves in the realm of formal and by no means empirical science: One adds the vectors that represent the productive forces and production relations in order to arrive at two types of superimposable empirical data.

Superposition holds an indeterminate existence and has the quantum as its essence, which in turn determines its virtuality. The quantum itself can be broken down into different types of heterogeneous dualities, which in turn are developed by it (bourgeoisie/proletariat; market/organization; production conditions/productive forces, etc.). However, for Laruelle, the essence of the quantum is the class struggle, whose superficial phenomenon is the struggle of classes. The class struggle here takes the generalized form of two inverse relations, that of dominance and orientation (relations of production > proletariat, etc.). In the class struggle, quantum Marxist rationality is always subdivided within the framework of the science of history.

Laruelle summarizes at this point: If the superposition is an addition of abstract vectors in a Hilbert space, then quantization is a problem of the relation between two measurement methods or it includes the two become themselves (coherence/incoherence), where the problem of orientation concerns the vectors and not the real numbers. Each measurement is directional and can be played off against another.

In the last instance, a non-commutativity must then be introduced between the two becomes. Also the principle of non-commutativity is borrowed from quantum physics. It states that two inverse products or physical quantities cannot be equal and exchangeable at the same time. However, there is not only the inversion between variables, but also the inversion of the products of variables; these are always to be understood from the point of view of their non-commutativity. Non-commutativity is a universal factor that applies to each variable in relation to another and moves unilaterally in all possible directions.

Class struggle is also to be understood as the non-commutativity of its variables. The true quantum (not the substantial or empirical quantum), namely the class struggle, includes non-commutativity as a general divider. Moreover, the quantum is an abstract force that affects all possible relations and not just a single relation. Thus, Laruelle can grasp the class struggle as a kind of quantum night, which can be compared to the quarter-turn or the imaginary number (i); it is universal and stands for every relation, it is the condition for every revolutionary aleatorism, it needs a kind of transcendence that functions as sub-determination. It radiates simultaneously in both inverse directions and simultaneously in all directions. Therefore one can never remain in a single unilateralism, e.g. neither that of the market nor that of the organization, even if these factors even define its possibilities.

Why are there both division and self-multiplying relations in the class struggle? And is class struggle always dominance and struggle? If there is a science of class struggle, then there are relations and two different methods of measurement which are non-commutative in their result. Quantum theory requires non-commutativity, the inversion of two relations as functions of two measurement methods, and this non-commutative inversion is the origin of combat. The class struggle therefore has nothing of contingency or chance, rather it is absolutely necessary in the course of the quantum model of history.

And another moment is added: the imaginary number as the square root of -1 creates a non-commutative class struggle with a minimal philosophical transcendence and finally this itself (depending on superposition and vectorial addition). The imaginary number is the reason of the sub-determination of the superposition (not the over-determination) and contains the element of dominance and struggle in the heart of the unity of relation, and this means that the struggle is unfolded within the great transcendence of ± 1 . There is a double transcendence to report here, that of the superposition of the virtual elements of representation and that of the quantum variables traversed by the imaginary number. (The transcendence of superposition results from the philosophical mode of potentiation.)

Laruelle thus introduces quantum theory to Marxism by means of the form of superposition, which itself is a processing quantum operation via a complex vectorization. Laruelles' intention here leads to a hard scientific modeling that is explicitly directed against the exclusive dominance of philosophy and the many neo-marxisms in Marxism. According to Laruelle, Marxism absolutely must be connected to the imaginary and complex operation of quantum algebra by writing a Marxism fiction that strictly turns away from attaching to Marxism a supplement, a deconstruction or a micro-politics, because all these additions remain philosophical additions in the last instance.

1. objection: Especially the mention of Deleuze/Guattari and Foucault regarding micro-politics will show us that Laruelle does not go far enough here, because he remains much stronger in the philosophical context than the authors mentioned here.

How can a new Marxism fiction be written? Laruelle understands the relation between productive forces and relations of production within the framework of a historically existing economy as stages of a quantum system. They can be superposed by reducing them to state vectors and to complexities or imaginary numbers (square root of -1). The classical type of synthesis or fusion is here no longer dialectical, but also no longer deterministic in the sense of a fusion of productive forces and production relations under the dominance of the latter.

And Marxism is now used itself as a vector and not within its empirical or macroscopic specificities. As a result, synthesis or fusion is conceived as an indeterministic and virtual "fusion" of state vectors that contain all the possibilities or potentials that can be updated in the context of a revolutionary and aleatoric process that takes place within a particle accelerator or within a socio-economy represented by the quantum apparatus.

Laruelle returns to the sad dualism of dialectical materialism and historical materialism that he has often mentioned. Laruelle rejects the duality and Hegel-oriented privileging of dialectical materialism and, with this move, understands historical materialism as the basis of a possible and universal knowledge of historical phenomena. The universality of quantum modelling corresponds to historical materialism, especially the superposition within the framework of a science of history. And the class struggle is the essence of a given socio-economy, the minimal quantum responsible for the existence of history at all, or in other words, the class struggle is the quantum from which a science of history is possible at all.

of a mathematical or set theory. Laruelle wants to break with these versions of Marxism by recognizing the same status of variables that are nothing but (complex) variables here and remain so within relations that are underdetermined and non-communicative. Isn't there still a version of a third term that takes on the function of a determination? Yes. It is that of the sums of the variables via the superposition, insofar as it persists in its products. (Neither science nor philosophy determine fusion in isolation from each other, nor can they update it.) If the integrated sum of the inverse products or the two aspects of the quantum are sent into the quantum apparatus, where they are treated in it in the style of a revolutionary aleatorism, if not even as an aleatoric revolution, then it still remains necessary for this apparatus to exist insofar as it forms a universal closure by superposition, namely that of a particle accelerator or as a closed theoretical locus that can simulate at least one quasi-transcendental dimension of the apparatus.

Marxism itself now becomes a quantum and definitely remains anti-hegelian by recognizing at least one sub-determination for each aspect and relation (via superposition). The determination now comes back in the form of a particle accelerator, which is perhaps too quickly said to represent nothing more than the sciences. But this particle accelerator is a quasi-transcendental apparatus, inextricably scientific and philosophical, accumulating two properties in a superposed state. This is an interpretation that affirms the primacy of an immanent formalism, insofar as superposition is not an external factor in the experimental field, but the quantum itself, the form of the science of history as its material quantum.

This kind of determination discusses laruelle as a sub-determination. It distinguishes a) the unilateral and positivist underdetermination of fusion by the sciences – provided here is the quantum theory, which is used in a wild way, b) the unilateral overdetermination by philosophy, and c) the universal underdetermination within and by the particle accelerator, which conjugates the unilateralities of the two variables and as generic ultimately maintains what remains of fusion. This last subdetermination is called laruelle determination-in-the-last instance. Simple unilateralism is here distinguished from

superposition, which is not unilateral, although it is quasi a third term, but as the form of a result that is not triangulation. The superposition does not result in an autonomous third term of a structure, but persists in an integral manner within a scientific-philosophical closure by subtracting itself not only as unilateral but as a complete subdetermination, i.e. by the addition of complex numbers within the superposition and then by their multiplication within the quantum. The particle accelerator devalues the particulate or undulatory product that comes from it. But the devaluation itself pulls it down to the level of the base and the center of gravity, owed to the complex or imaginary numbers, as if a building would sink down in its own ruins, a break in equilibrium, a devaluation within the transcendental process of elevation. The quantum particle accelerator thus creates a new space.

The complex form of science is still on one side and its matter on the other. The formal reason as superposition and the material reason as quantum, however, remain insufficient with regard to the constitution of a generic theory if they remain separate on each side. Laruelle therefore introduces the efficient reason as a group that gathers the quantum apparatus by taking the initiative within its materiality and function. This group is the subject of generic Marxism as Agent=X. The agent forms a part of the apparatus, he belongs to it in spite of external conditions, namely in view of the immanent probabilistic effects of the apparatus and the structuring by his own becoming quanta, whereby he appears as an equivalent of the final reason, which in reality, however, is an aleatoric reason. What then produces the apparatus? Potentialities (within the indefinite superposition) that become real or actual when the apparatus exists.

3rd objection: Laruelle cannot think the outside.

For Laruelle, the subject of Marxist theory is ambiguous: a) superposition of a collectivity of individuals within a particular socio-economy and its social and historical changes, b) duality of bourgeoisie/proletariat variables conjugated in inverse and indeterminate products to form the anthropological quantum, c) subject=X, which actualizes the variables from their virtuality. Laruelle concludes that the quantum theory of history must accept the indetermination of the results of the struggles.

4th objection: At this point Laruelle falls into a democratizing humanism.

For Laruelle, the ultimate stage of non-standard Marxism is reached with the speculative (and no longer formal) particle accelerator of history. Thus all physical conditions and singularities are simultaneously understood as theoretical objects or corpuscles, starting from the initial quantum, which is divided and multiplied by itself in order to achieve the potentialization of the immanence of the quantum. This has effects not only on the quantum, but also on the superposition, which is now also potentialized. There are two stages of superposition: the primary, which results in two micro/macro becoming, in which the material remains empirically given and formally becomes only through the form, and then the secondary and complex superposition, which traverses not only the form but also the material and leads to an absolutely immanent quantization. The superposition and the quantization are either those of the simple variables (formal quantum theory) or they are potentialized and then possess a formalized empirical matter, that is, doubly formalized vectors, through form and matter.

In the second part, we will proceed to the formulation of the objections in order to come closer to the conception of a real quantum Marxism, which certainly should not be preceded by one.

Which of the two axioms of quantum theory – superposition and non-commutativity – now has priority for Laruelle?

Superposition is the form or principle of knowledge, the formalistic fact or its existence as the reality of science. It comes within production of knowledge before the quantum, which is its material ground. Non-commutativity, on the other hand, is an essential property derived from the quantum in so far as it represents the index of the minimal existence of a material for the sciences and must be dealt with within an apparatus and is also needed for theoretical use in determining two variables with inverse products. Let us summarize it this way with laruelle: Quantum theory substitutes the old dialectic, superposition substitutes totality and quantum substitutes the commutativity of philosophical dialectic. Equipped with these new instruments, historical materialism takes over the formalism or reality of any science, even that of history, while dialectical materialism maintains its usefulness with the contingency of quantum, which represents the essence of the material.²

A more concrete version of the axioms discussed so far must now involve humanity by forming the connection of the revolutionary duality of the bourgeoisie/proletariat variables – a connection that constitutes the aspects of the quantum and its human results. This involves the fusion of the masses with the theory, both of which struggle in a non-hierarchical and non-commutative manner. As one element takes up the other, there are various effects or possible outcomes that constitute the aleatoric dynamics of history. Within a generic science, the quantum can no longer be defined in the way the Planck has done with the constant for physics, but must be defined in the context of humanity divided into bourgeoisie and proletariat. In order now to arrive at the immanence of the revolutionary process itself, an externally fixed constant must be rejected; instead, a constant must be installed that is the subject=X, while still considering the two variables (bourgeoisie/proletariat) that are sent into the quantum apparatus of history. What justifies the science of history as reality is now the contingency of the quantum that constitutes capitalism and its inner struggle (it is not the real that defines the form of science as superposition). The class struggle is contingent in its relationship to the essence of the sciences, but there is nothing contingent when it comes to the scientific definition of the object, even if it manifests itself as the effect of the struggle. (The object contains the identity of the struggle of the classes that holds the counterparts together through division.)

Non-standard Marxism in this context is a scientific productive force, inseparably a quantum, and is at the level of the human quantum, which is inseparably bourgeois and proletarian as a production relationship. There are multiple interpretations of this matrix for Laruelle, in which one can always implement new disciplines. This matrix does not tolerate hierarchies, but demands equality between theory and masses within a generic theory, in order finally to generate a new collective subjectivity. Laruelle proposes at this point an interpretation of Marxism that is more epistemological than economic and is more oriented towards those Marxists who strive for struggle and humanity. However, one risks an interpretation that runs parallel to economic theory and its materialism by favouring productive forces that are no longer economic but scientific and positivist.

2nd objection: The relationship of laruelle to the analysis and critique of the capital economy remains indefinite, since he himself has no concept of capital. He thus inevitably remains in the hegemonic problem of philosophy that he has just criticized.

Furthermore, there is the problem of determining the fusion of variables, a determination that decides on their relative effects and or their orientations. Within a philosophically oriented fusion, in which one term fuses with the other term (both as simple variables), a division into two occurs, whereby the fusion is always overdetermined. This creates an indexation that verticalizes or transcendentalizes the fusion. Within a scientifically oriented Marxism, on the other hand, the problem of economism in the sciences or a scientism is more likely to arise.

1) The quarter turn stands for the geometric representation of the complex, imaginary numbers and is denoted with the square root -1 . A complex number has two parts: a real part and an imaginary part, for example $2 + 3i$. If you draw a real line in geometry and place an imaginary line at right angles, then you can represent the complex number as a point on the graph (with its two axes). Multiplying a number with i and turning the line clockwise 90 degrees from its origin is considered equivalent here. Further you can write: $1 * i = 1i$, $1i * i = -1$ Because the square root of i is -1 , n is $i * i = n * -1 = -n$. Exactly this is the "quarter-turn". To capture it briefly and concisely as a circular form: The real becomes the imaginary, the imaginary becomes the negative real, the negative real becomes the negative imaginary, and the negative imaginary becomes the real.

2) Althusser's thesis that certain answers precede certain questions indicates that the answers of quantum physics precede the classical problems via their aleatoric character; these answers are a priori not calculable, and this characterizes the superposition that contains all potentialities for synthesis or fusion.

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